UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 February 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-26_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-26_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _26 April 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _04/26/2006_.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Construction

1.   Claims 1-12 and 20-26 are construed under 112, 6th paragraph.   The "means for receiving service primitives...", "means for receiving configuration information...", "means for managing the CPE configuration...", "means for controlling and scheduling...", "means for interfacing...", "means for processing and storing...", and "means for transferring data..." elements in claims 1, 5 and 20 are not tied to any structure, which places the claims to be construed under 112, 6th paragraph.

Specification

2.   The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no corresponding structure in the specification for the "means for receiving service primitives...", "means for receiving configuration information...", "means for managing the CPE configuration...", "means for controlling and scheduling...", "means for interfacing...", "means for processing and storing...", and "means for transferring data..." elements in claims 1, 5 and 20.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claim(s) 1-12 and 20-26 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention nor to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the

invention. "A configurable protocol engine..." and an "electronic device" as recited in

claims 1 and 20 does not possess any corresponding structure in the specification to

support the "means for receiving service primitives...", "means for receiving

configuration information...", "means for managing the CPE configuration...", "means for

controlling and scheduling...", "means for interfacing...", "means for processing and

storing...", and "means for transferring data..." functions which have been construed

under 112, 6th paragraph and thus requires such a claim to cover the corresponding

structure, material, or acts described in the specification and equivalents thereof.

Therefore, the specification is deficient. See the following 112, 2nd paragraph rejection.

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

6.   Claim(s) 1-12 and 20-26 are rejected under 35 U.S.C. 112, second paragraph, as

being incomplete for omitting essential structural cooperative relationships of elements,

such omission amounting to a gap between the necessary structural connections. See

MPEP § 2172.01.

7.   Regarding claim 1, 5 and 20, the word "means" is preceded by the word(s) "for

receiving service primitives...", "for receiving configuration information...", "for managing

the CPE configuration...", "for controlling and scheduling...", "for interfacing...", "for

processing and storing...", and "for transferring data...", to use a "means" clause to

recite a claim element as a means for performing a specified function. However, there

is no corresponding structural support in the specification for performing these actions.

Therefore, it is impossible to determine the equivalents of the elements with any

structure in the specification, as required by 35 U.S.C. 112, sixth paragraph.

Claim Rejections - 35 USC § 101

8.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

9.   Claim(s) 1-12, 17, 18, and 20-26 are rejected under 35 U.S.C. 101 because it is

directed to non-statutory subject matter.

10.   "A configurable protocol engine..." as stated in claim 1 does not possess any

structure either in the claim or correspondingly in the specification; and thus does not

qualify as a process, machine, manufacturer, or composition of matter. The "means for

receiving service primitives...", "means for receiving configuration information...",

"means for managing the CPE configuration...", "means for controlling and

scheduling...", and "means for interfacing..." are directed solely to software and thus is,

at best, tied to a non-statutory "configurable protocol engine" of software, which thus

does not qualify as a process, machine, manufacturer, or composition of matter. Claim

12 is further rejected under 35 U.S.C. §101 because the claim recites that the

"configurable protocol engine" could be software per se.

11.   "A computer program..." as recited in claims 17 and 18 is rejected under 35

U.S.C. §101 because a program is non-statutory subject matter and does not qualify as

a process, machine, manufacturer, or composition of matter.

12.   "An electronic device..." as stated in claim 20 does not possess any structure

either in the claim or correspondingly in the specification; and thus does not qualify as a

process, machine, manufacturer, or composition of matter. Although claim 20 is

ostensibly labeled "an electronic device" the following functional language "means for

processing and storing..." and "means for transferring data..." are directed solely to

software and thus is, at best, tied to a non-statutory "device" of software, which thus

does not qualify as a process, machine, manufacturer, or composition of matter.

Claim Rejections - 35 USC § 102

13.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14.   Claims 1-6, 10-14 and 16 are rejected under 35 U.S.C. 102(b) as being

anticipated by Lenz et al. (US 20010015984), hereinafter referred to as Lenz.

15.   With regard to claim 1, the Lenz reference teaches a configurable protocol

engine (CPE) for configuring and constructing a communication protocol (see paragraph

0008 for emulation environment) comprising means for receiving service primitives (see

paragraphs 0011 and 0141-0148, for description files including a list of primitives for the

protocol layer emulations), means for receiving configuration information (see figure 4

and paragraphs 0010 wherein the protocol layer emulations 34 include SAPs for

receiving information; also, figure 2 and bottom of paragraph 0023 and 0027, wherein

an emulation management layer serves to control configuration of the emulation

protocol layers of a protocol stack), means for managing the CPE configuration on the

basis of the configuration information (see figure 3 and paragraph 0026, wherein an

emulation manager is used for managing configuration of the emulation protocol layers

of a protocol stack), means for controlling and scheduling at least part of internal

processing in the CPE on the basis of the CPE configuration (see bottom of paragraph

0023 wherein an emulation management layer serves to control configuration of the

emulation protocol layers of a protocol stack; also see paragraph 0012, wherein a GUI

provides protocol layer-specific information with the user being able to modify adjustable

and constant parameters and actions of the protocol layer), means for interfacing an

upper and lower protocol layer on the basis of the CPE configuration (see figure 4 and

paragraph 0011, wherein a protocol layer can be configured so that it is connected to a

higher protocol layer and a lower protocol layer), and -a number of functions for

processing data in accordance with the CPE configuration (see paragraph 0024 wherein

the emulation interface layer provides the emulation protocol layers functions for

processing data).

16.   With regard to claim 2, the Lenz reference teaches the configurable protocol

engine of claim 1, arranged to select said number of functions on the basis of the CPE

configuration from a plurality of functions, said plurality of functions comprising an equal

or larger number of functions than said number of functions (see figure 5 and paragraph

0194 wherein control functions may be selected with which a protocol stack may be

created).

17.   With regard to claim 3, the Lenz reference teaches the configurable protocol

engine of claim 1, arranged to receive and process the configuration information during

the CPE start-up or at run-time (see bottom of paragraph 0024 wherein only during

installation and de-installation is configuration information imported by the emulation

interface layer to initialize and de-initialize emulations and to start the emulation).

18.   With regard to claim 4, the Lenz reference teaches the configurable protocol

engine of claim 1, arranged to construct said CPE configuration on the basis of at least

one of the following: service requirements, required QoS (Quality of Service), hardware

resources, and network resources (see paragraphs 0008 and 0011 wherein protocol

emulation layers are constructed as required into a protocol stack or into a network of

protocol layer emulations).

19.   With regard to claim 5, the Lenz reference teaches the configurable protocol

engine of claim 1, arranged to configure said means for interfacing an upper and lower

protocol layer on the basis of received configuration information (see figure 4 and

paragraph 0011, wherein a protocol layer can be configured so that it is connected to a higher protocol layer and a lower protocol layer).

20.   With regard to claim 6, the Lenz reference teaches the configurable protocol engine of claim 1, arranged to receive one or more functions from an external entity to be included in said number of functions (see figure 5 and paragraph 0194 wherein a user may select control functions with which a protocol stack may be created).

21.   With regard to claim 10 the Lenz reference teaches the configurable protocol engine of claim 1, wherein the received configuration information explicitly defines the CPE configuration (see paragraph 0009 wherein a description file describes atleast one characteristic of the protocol layer).

22.   With regard to claim 11, the Lenz reference teaches the configurable protocol engine of claim 1, wherein the received configuration information is a source for constructing the CPE configuration (see paragraph 0011 wherein the description file contains a description of the SAP by way of a list of primitives and protocol layer parameters and actions).

23.   With regard to claim 12, the Lenz reference teaches the configurable protocol engine of claim 1 that is software, hardware, or a combination of both (see figure 1 and paragraph 0023 wherein the emulation environment includes a PC board and an operating system).

24.   With regard to claim 13, the Lenz reference teaches a method for configuring a configurable protocol engine (CPE) in order to construct a communication protocol, said method having the steps of-receiving configuration information (see paragraph 0009

wherein a protocol layer is assigned a description file), defining the CPE configuration on the basis of said configuration information (see paragraph 0009 wherein the description file describes atleast one characteristic of the protocol layer), and adapting the CPE to the defined CPE configuration, whereby at least one action is performed, said action selected from the group of: an interface towards an external entity is implemented, a queue for a service primitive is implemented, and a function to be used for processing data included in a service primitive is determined (see paragraph 0012 wherein a graphical user interface is implemented which may be used via a user).

25.   With regard to claim 14, the Lenz reference teaches the method of claim 13, wherein the CPE configuration is defined on the basis of at least one of the following: service requirements, required QoS (Quality of Service), hardware resources, and network resources (see paragraphs 0008 and 0011 wherein protocol emulation layers are constructed as required into a protocol stack or into a network of protocol layer emulations).

26.   With regard to claim 16, the Lenz reference teaches the method of claim 13, wherein the function is determined by selecting the function from a plurality of functions on the basis of the CPE configuration, or by receiving the function or an indication thereof from an external entity (see figure 5 and paragraph 0194 wherein a user may select control functions with which a protocol stack may be created).

Claim Rejections - 35 USC § 103

27.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

28.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lenz et

al. (US 20010015984) and in further view of Pearson (US 5,903,754).

29.   With regard to claim 7, the Lenz reference does not explicitly teach The

configurable protocol engine of claim 1, arranged to select a function to said number of

functions on the basis of the service level provided by the function or of at least one cost

factor related to said function. However, the Pearson reference does teach such a

limitation. According to Pearson, protocol layers can include functionality controls

whose features in a protocol stack are important depending on a systems

communication level (see Pearson, column 7 lines 33-39). Lenz teaches that a user

may select control functions with which a protocol stack may be created (see Lenz,

paragraph 0194). Therefore it would have been obvious to a person of ordinary skill in

the art at the time the invention was made to have combined the teachings of Lenz and

Pearson to have selected functions based on the systems communication level

functionality in order to provide a function that is most important to the protocol layer or

stack.

30.   Claims 8, 9, 15 and 17-26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lenz et al. (US20010015984), and in further view of Pavan et al. (US

6,801,943), hereinafter referred to as Lenz and Pavan, respectively.

31.   With regard to claims 8 and 9, the Lenz reference does not explicitly teach the

configurable protocol engine of claim 1, arranged to apply scheduling to the received

service primitives and to perform scheduling by maintaining a number of queues for the

service primitives, said queues served on the basis of their priority, and said primitives

placed into the queues on the basis of their priority. However, Pavan does teach such

limitations. Pavan teaches a priority based scheduling method using a network

scheduler and input/output control primitives to control servicing of queues of packets

with each queue representing the priority of the packets (see Pavan, column 5 lines 23-

50). Lenz teaches an interface for communication paths to the protocol layer

emulations using external queues for their implementation (see Lenz, paragraph 0024).

Therefore it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to have combined the teachings of Pavan and Lenz to have the

queues taught by Lenz include the priority based scheduling as taught by Pavan in

order to ensure that higher priority primitives are allocated before lower priority

primitives.

32.   With regard to claim 15, the method of claim 13 and all of the limitations are

rejected as obvious over the Lenz and Pavan references as recited in the rejection of

claims 8 and 9 above.

33.   With regard to claim 17 and 19, the Lenz reference does not explicitly teach a

computer program for implementing at least part of a configurable protocol engine

(CPE) for constructing a protocol, said computer program comprising code means to

define and manage the CPE configuration on the basis of available configuration

information and to provide a number of functions for processing data included in the

service primitives in accordance with the CPE configuration and a carrier medium

carrying the computer executable program of claim 17. However, given the nature of

the Lenz invention's components (i.e., PC board, operating system, RAM and hard disk)

clearly a person of ordinary skill in the art at the time the invention was made would

have understood from the Lenz reference that the invention implicitly discloses

employing a program for implementation and that a medium for carrying the program

was a common practice in the art at the time the invention was made. Furthermore,

Lenz teaches means to define and manage the CPE configuration on the basis of

available configuration information (see bottom of paragraph 0023 for emulation

management layer 33 which serves to control installation and configuration of the

protocol emulation layers or protocol stack), and to provide a number of functions for

processing data included in the service primitives in accordance with the CPE

configuration (see paragraph 0024, wherein functions such as to assign storage and

start and stop timers are provided to the emulations). However, the Lenz reference

does not teach to schedule processing of received service primitives on the basis of the

CPE configuration. However, this limitation is taught by and made obvious over the

Pavan reference as recited in the rejection of claims 8 and 9 above.

34.   With regard to claim 18, the computer program of claim 17 and all of the

limitations are taught by the Lenz and Pavan references as recited in the rejection of

claims 8, 9 and 17 above.

35.   With regard to claim 20, the Lenz reference teaches an electronic device for

implementing a configurable protocol engine (CPE) capable of receiving and processing

service primitives (see figures 1 and 2 and paragraph 0024 for protocol tester including

an interface board 24, and paragraph 0011 wherein the emulations on the interface

board include a description file with a list of primitives) said device comprising

processing and memory means for processing and storing instructions and data (see

paragraph 0023 for central processing unit and a random access memory and hard

disk), and data transfer means for transferring data (see figures 1 and 2 for remote

transfer layer 28), said device arranged to receive configuration information, to manage

the CPE configuration on the basis of the configuration information (see bottom of

paragraph 0023 wherein the device includes a emulation management layer to control

cooperation, installation and configuration of the protocol emulation layers or protocol

stack) . However, the Lenz reference does not explicitly teach, to schedule at least part

of the internal processing within the CPE on the basis of the CPE configuration, and to

process received service primitives in accordance with the CPE configuration.

However, these limitations are taught by and made obvious over the Pavan reference

as recited in the rejection of claims 8 and 9 above.

36.   With regard to claim 21, the Lenz reference teaches the electronic device of

claim 20, further arranged to interface an upper and lower protocol layer on the basis of

the CPE configuration (see figure 4 and paragraph 0011, wherein a protocol layer can be configured so that it is connected to a higher protocol layer and a lower protocol layer).

37. With regard to claim 22, the Lenz reference teaches the electronic device of claim 20, further arranged to select a number of functions from a plurality of functions in accordance with the CPE configuration in order to implement a protocol (see figure 5 and paragraph 0194 wherein a user may select control functions with which a protocol stack may be created).

38. With regard to claims 23, 24, and 25, the electronic device of claims 20, 23, and 20, respectively, and all of the limitations are taught by the Lenz and Pavan references as recited in the rejection of claims 8 and 9.

39. With regard to claim 26, the Lenz reference teaches the electronic device of claim 20 that is substantially a wireless communication device or a computer (see paragraph 0023 wherein a protocol tester includes a PC board with an operating system).

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lenz et al. (US 20010015984) teaches creating a protocol stack. Pearson (US 5,903,754) teaches associating a service level with functions of a protocol stack. Pavan et al. (US 6,801,943) teaches a priority based scheduling method using primitives.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN BOUKNIGHT whose telephone number is (571)270-5701. The examiner can normally be reached on Monday-Thursday and alternative Fridays from 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger can be reached on (571)272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. B./
Examiner, Art Unit 2443

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